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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,986	03/01/2002	Gerard O'Driscoll	TD-166	6316

29106 7590 06/23/2004

ROBERT GROOVER III
11330 VALLEYDALE DR.
DALLAS, TX 75230

EXAMINER

CASCHERA, ANTONIO A

ART UNIT	PAPER NUMBER
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2676

DATE MAILED: 06/23/2004

17

Please find below and/or attached an Office communication concerning this application or proceeding.

17

Office Action Summary

Application No.

10/086,986

Applicant(s)

O'DRISCOLL, GERARD

Examiner

Antonio A Caschera

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-3 and 5-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claimed subject matter of independent claims 1, 5, 13, 19, 22 and 28, in particular, the determining of a plurality of orientation classes the entire line falls into, was not described in the specification in such a way as to enable one skilled in the art to which it pertains, to make and/or use the invention. The claims currently describe what techniques the invention does not utilize in the antialiasing method however it does not describe what techniques the invention does perform. The examiner is confused on several aspects of the invention as claimed in the independent claims. The examiner asks, how the determining of orientation of lines is based on the sampling pattern? And how exactly are the lines classified as x-major or y-major depending on the x or y extent of the line? Further, the examiner does not understand how the two sampling patterns are implemented. Specific details are needed in order to understand how to make the invention. For example, is the determination of orientation calculated by summations, logically computed, or software based? Also, what elements are doing these calculations? Another

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question the examiner raises is in regards to the lack of use of an error term and pixel-by-pixel decisions and to what step of the antialiasing method they are applied to, the determining of orientation or subpixel sampling?

No further search can be made until such limitations are further clarified and enabling in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Wong et al. (U.S. Patent 6,172,680 B1).

In reference to claims 1 and 5, Wong et al. discloses a method for providing video graphics processing including anti-aliasing of an object's edges by walking a first and second edge of an object element (see lines 1-5 of abstract). Wong et al. discloses an example of the object to be a triangle and an object element to be the left edge of the triangle (see column 2, lines 57-61). Note, the office interprets the edge of an object element (i.e. an edge of the triangle as disclosed above by Wong et al.) substantially similar to the anti-aliased lines of applicant's claim 1 as polygons are made up of primitive graphical lines. Wong et al. also discloses for two edges of the triangle, or two line segments of the triangle, determining which orientation class

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the line falls into by edge walking and using an error term and threshold value to determine in which direction, a major or minor direction, to walk (see column 11, lines 40-66 and Figure 6). Wong et al. discloses determining different subpixel masks, which are then processed to produce pixel information for a given pixel (see column 1, lines 36-38), dependent upon the changes in the X and Y traversed directions (see columns 12-13, lines 53-9 and Figure 9). Note, the office interprets the subpixel masks substantially similar in functionality to the sampling patterns of applicant's claims and also believes the further processing of subpixel masks, discloses above by Wong et al., to be substantially similar to the sampling of subpixels. Note, in reference to claim 5, the office interprets that the edge walking of Wong et al. substantially determines a direction which is most nearly parallel to a line segment of an object since the edge walking of Wong et al. uses the difference in length between the major axis and the edge (see "error terms" of Figure 6) to decide if and when to walk in the minor direction. Further, since Wong et al. discloses determining different subpixel masks, which are then processed to produce pixel information for a given pixel (see column 1, lines 36-38), dependent upon the changes in the X and Y traversed directions (see columns 12-13, lines 53-9 and Figure 9), the office interprets the subpixel masks having maximal resolution normal to the direction they're calculation is based upon (i.e. major direction) versus the opposite direction (i.e. minor direction).

In reference to claim 2, Wong et al. discloses all of the claim limitations as applied to claim 1 above in addition, Wong et al. discloses the edge walking process to operate in the two directions of X and Y (see column 11, lines 52-66 and Figure 6).

In reference to claim 3, Wong et al. discloses all of the claim limitations as applied to claim 1 above in addition, Wong et al. discloses the creation of the subpixel masks to be

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dependent upon the slope of the previous direction taken or the orientation of the line determined by edge walking (see columns 12-13, lines 63-9).

In reference to claim 6, Wong et al. discloses all of the claim limitations as applied to claim 5 above in addition, Wong et al. discloses the edge walking process to operate in the two directions of X and Y (see column 11, lines 52-66 and Figure 6).

In reference to claims 7 and 8, Wong et al. discloses all of the claim limitations as applied to claims 1 and 5 respectively above in addition, Wong et al. discloses a video graphics processor including a processing unit for executing the above disclosed methods (see column 12, lines 18-35 and Figures 7 and 8).

Response to Arguments

3. In view of the Amendment B filed on 5/24/2004, PROSECUTION IS HEREBY REOPENED. A new grounds of rejection is set forth above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (703) 305-1391. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (703)-308-6829.

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Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Technology Center 2600 Customer Service Office whose telephone
number is (703) 306-0377.

aac

6/22/04



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600